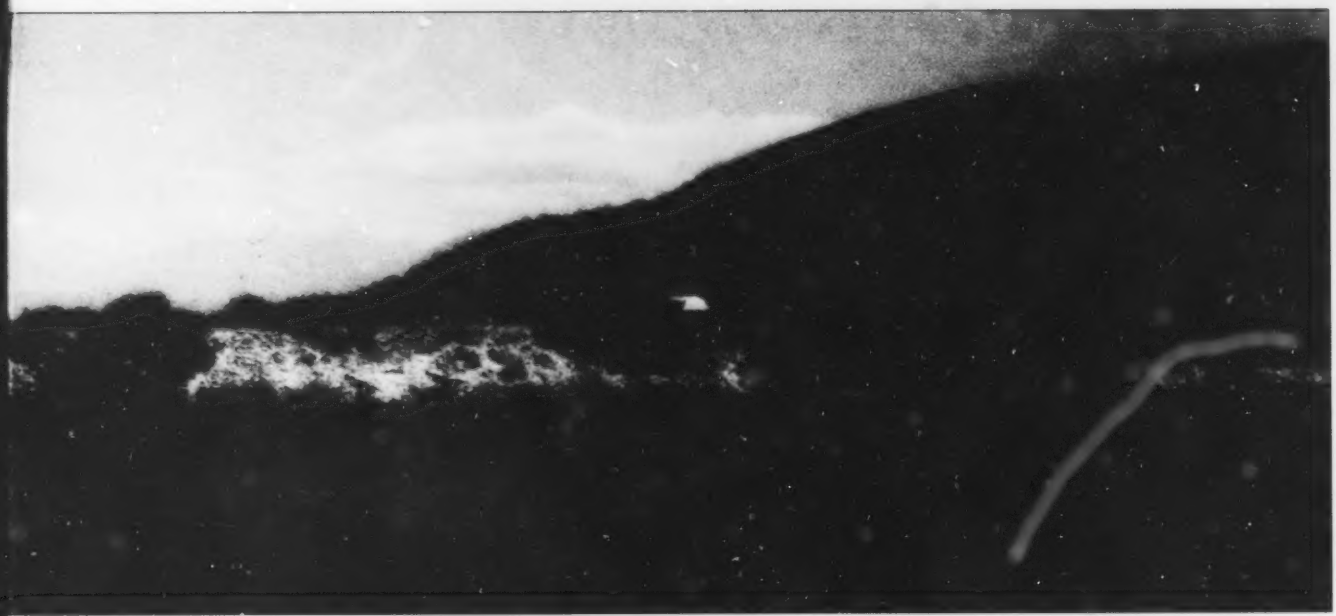
Environmental Guidelines for Vegetation Management on Flood Protection Works to Protect Public Safety and the Environment



BC Ministry of Environment, Lands and Parks

Department of Fisheries and Oceans Canada

DOC
BC
W324
D:E58
1999
c.3

March, 1999

Fisheries and Oceans Canada

Pêches et Océans Canada

British Columbia
Ministry of Environment, Lands and Parks

LEGISLATIVE LIBRARY
VICTORIA, BC V8V 1X4

LEGISLATIVE LIBRARY OF BRITISH COLUMBIA
3 3298 00247 3446

Environmental Guidelines for Vegetation Management on Flood Protection Works to Protect Public Safety and the Environment

BC Ministry of Environment, Lands and Parks

Department of Fisheries and Oceans Canada

March, 1999

Canadian Cataloguing in Publication Data
Main entry under title:
Guidelines for vegetation management on flood protection works to protect public safety and the environment

Co-published by Dept. of Fisheries and Oceans Canada
ISBN 0-7726-3836-5

1. Dikes (Engineering) - British Columbia - Maintenance and repair. 2. Dikes (Engineering) - Environmental aspects - British Columbia.
3. Vegetation management - British Columbia
I. British Columbia. Water Management Branch.
II. Canada. Dept. of Fisheries and Oceans.

TC337.G842 1999 627'.42'0288 C99-960115-6

Table of Contents

1.0 Introduction 1

2.0 Scope 2

3.0 Vegetation Management Principles 2

4.0 Guidelines for Vegetation Management on Flood Protection Works 3

Appendices

A. Glossary 9

B. Fish Habitat and Dike Maintenance Activities 11
The Federal Fisheries Act 12

C. The BC Fish Protection Act 13
The BC Water Act 13
The BC Dike Maintenance Act 14

D. Environmental Review Process
Fraser River Estuary and Management Program (FREMP) 15
Burrard Inlet Environmental Action Plan (BIEAP) 15
Squamish Estuary Environmental Assessment Committee (SEAAC) 15
Planning & Assessment MELP 16

E. Recommended Vegetation Management Workplan Template 18

LEGISLATIVE LIBRARY
VICTORIA, BC V8V 1X4

101-00535/

1.0 Introduction

These guidelines have been developed by British Columbia Ministry of Environment, Lands and Parks (MELP) Water Management in consultation with MELP Fish & Wildlife Management and the Canada Department of Fisheries and Oceans (DFO). The guidelines present minimum standards under the Dike Maintenance Act for vegetation management on flood control structures to protect public safety, and identify opportunities to protect and/or enhance habitat to benefit the environment. Based on almost a decade of experience since issuance of the last guidelines, there is now an understanding that in certain situations additional vegetation on or near flood protection works will not compromise their integrity and public safety. This provides Diking Authorities with acceptable opportunities to further enhance and protect riparian vegetation during dike maintenance activities for the benefit of both fish and wildlife.

The guidelines outline mandatory technical, inspection, and maintenance requirements to ensure dike safety. The guidelines apply only to vegetation management, not to major bank protection repairs, nor new flood protection works. The guidelines apply to maintenance of flood protection dikes and bank protection; they are not intended to cover drainage ditches and channels.

While the guidelines are comprehensive regarding the technical requirements for ensuring public safety, they do not provide criteria required to protect sensitive fish habitats. In this regard, information regarding fish habitat and the federal Fisheries Act is provided in Appendix B, and the BC Fish Protection Act, BC Water Act and BC Dike Maintenance Act is in Appendix C. It is anticipated that sensitive fish habitat areas will be identified through annual work plans and those areas which do not have significant environmental concerns will be quickly screened out of the environmental review process. Appendix D provides information on local environmental review processes, such as the Fraser River Estuary Management Program and Appendix E provides a vegetation management template.

It is expected that the guidelines will reduce uncertainty regarding vegetation management on dike structures and provide Diking Authorities with tools and information to further their stewardship of the environmental values associated with flood protection works.

2.0
Scope

These guidelines were developed to apply to MELP Region 2, which encompasses the Lower Fraser Valley including Hope, the Squamish-Pemberton corridor and the Sechelt Peninsula. Basic public safety needs are common to all flood protection structures in BC and this information can be adapted to other areas. It should be noted that habitat protection requirements may vary from region to region.

3.0
Principles of Vegetation Management

Vegetation management guidelines for flood protection dikes are determined by the public safety need for visibility for inspection, access for efficient operation and maintenance, and minimization of detrimental effects to dike fills and bank protection.

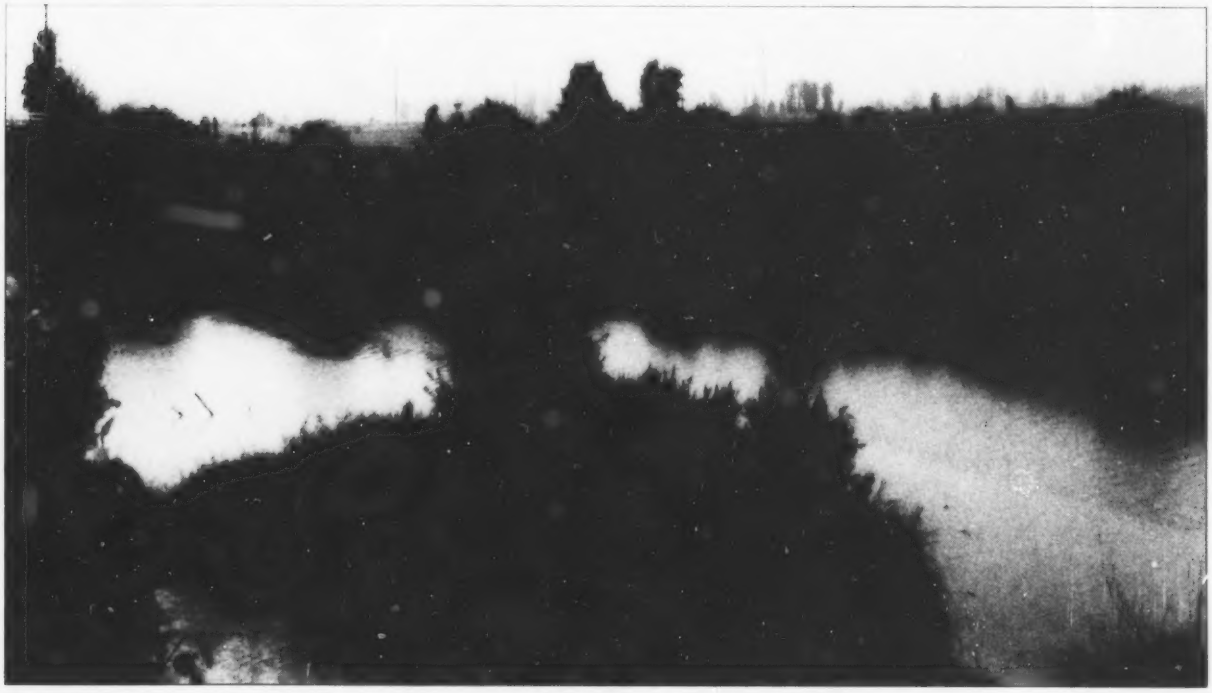
Vegetation management should, where possible, include efforts to preserve and enhance fish and wildlife habitat in the overall stream/river corridor.

Vegetation (including roots and canopy) can improve both dike safety and habitat through soil conservation and erosion control. For example, setback strips, overbank and vegetation between flood protection works and the watercourse are recognized for their dike safety, environmental and aesthetic values.

Bank protection and riparian vegetation – Cowichan River

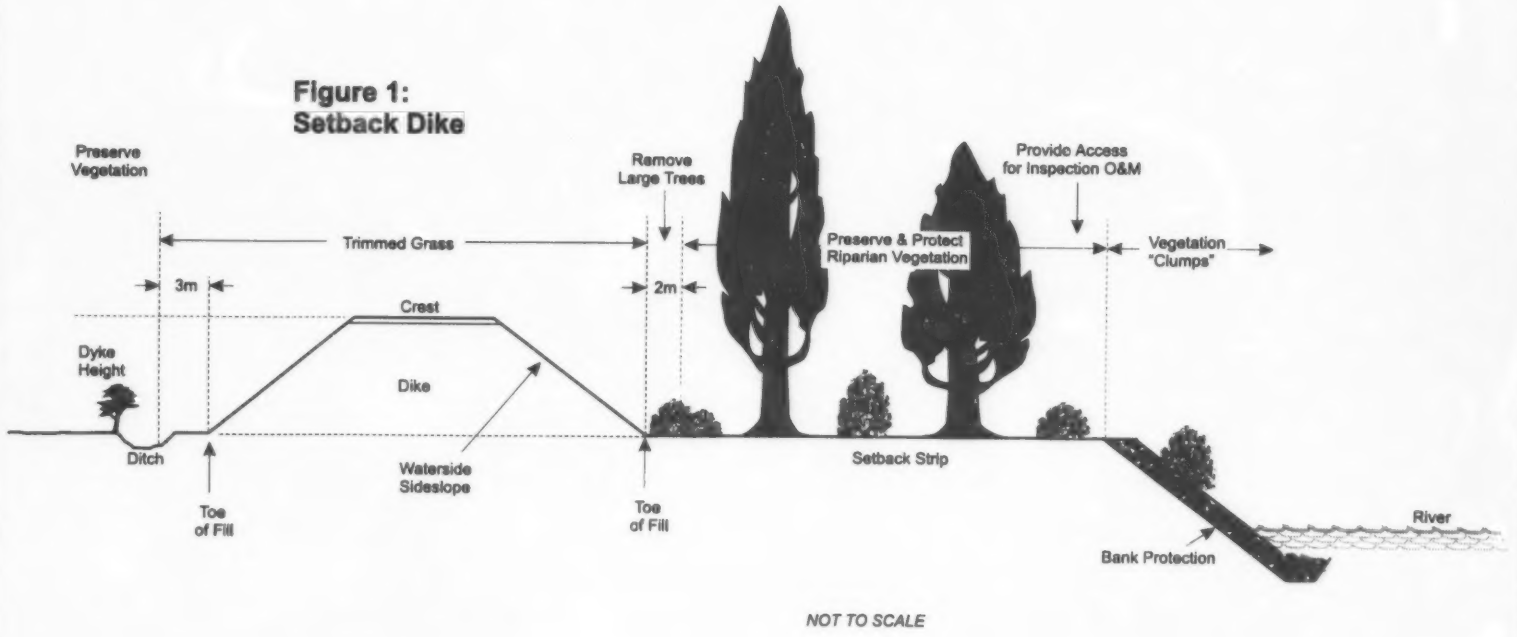
4.0
Guidelines for Vegetation Management on Flood Protection Works

1. These guidelines are subject to periodic review based on future experience and research.
2. Vegetation management in environmentally sensitive bird nesting areas shall be scheduled annually from September 1 to March 31 (other than removal of noxious weeds).
3. Care should be taken to minimize disturbance to stems and roots of vegetation where possible during site access for maintenance activities.
4. Dike Crests shall be kept clear of vegetation other than trimmed grass, and accessible with due regard for inspection sight lines.
5. Dike sideslopes:
   a) The landside sideslope of dike fills shall be kept clear of vegetation other than trimmed grass, including a minimum 3 metre strip beyond the landside toe. (Increases in the landside strip may be considered where necessary, consistent with minimum needs for efficient operation of mowing equipment.)
   b) The waterside sideslope of riverside and setback dike fills shall be kept clear of vegetation other than trimmed grass to the toe of dike fill as determined by the dike height. Large vegetation (greater than 300 mm diameter trunk/stem) shall be removed from an additional 2 metre strip measured horizontally. Consideration may be given to increasing the riverside strip consistent with minimum needs for efficient operation of mowing equipment (see Figure 1).



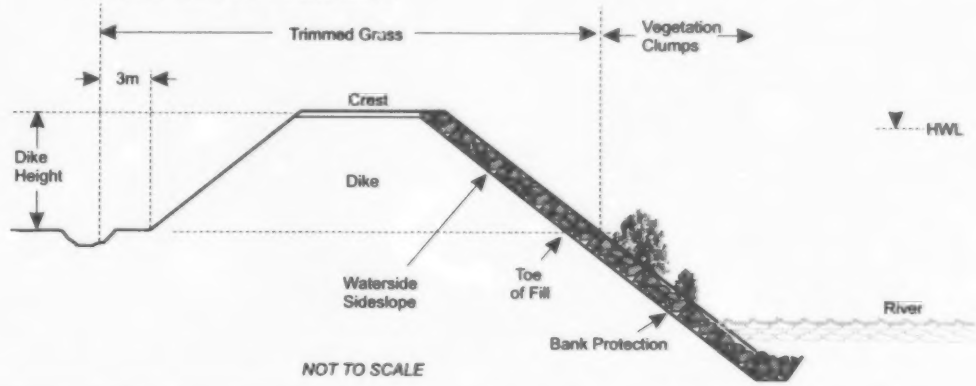
Preserving streamside vegetation adjacent to a setback dike – Serpentine River

Figure 1:
Setback Dike



6. Riverside Dikes* with Bank Protection: (Figure 2) The waterside sideslope of riverside dikes with bank protection shall be cleared above the toe of fill as per guideline 5b. Portions of bank protection extending below the dike height may contain vegetation clumps as per guideline 9.

Figure 2:
Riverside Dike with Bank Protection



Riverside dike with bank protection and acceptable vegetation clumps.

*see definition in glossary in Appendix 1

7. Overwidth Dikes: Subject to ensuring road safety and road maintenance needs as applicable, vegetation may be retained to maintain or enhance environmental values on the sideslopes of overwidth dikes. Overwidth dikes (Figure 3) have standard dike sideslopes (or flatter) and a minimum of 9 metres crest width measured from the landside edge of crest (or equivalent). These may be formed by roads or dikes constructed beside natural levees (Figure 4).

   Provided dike safety is not effected, trees may be retained on the sideslopes of overwidth dikes without bank protection, so long as they are spaced and pruned. Trees should be thinned, topped or removed (especially if higher than 15 metres) and the lower 1.5 metres of trees should be regularly pruned of branches to maintain inspection sight-lines. To facilitate possible emergency works, trees are not recommended in the freeboard range (0.6 metres vertical).

   Clearing of vegetation on waterside slopes of overwidth dikes with bank protection may be undertaken as per guidelines 8. and 9.

Figure 3:
Overwidth Dike

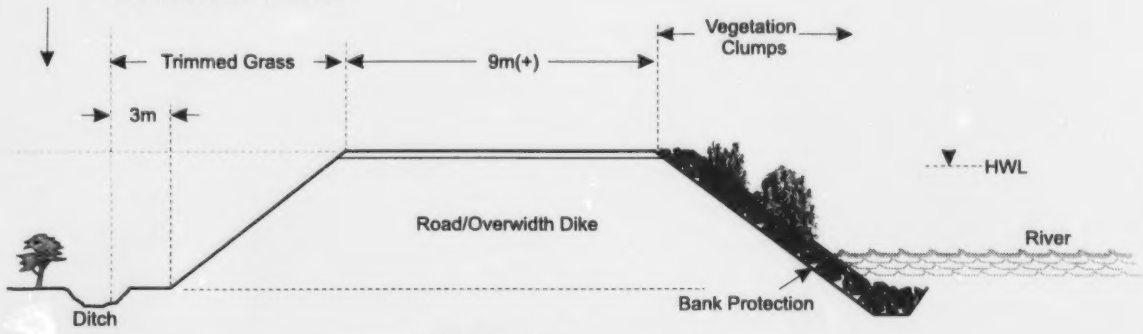
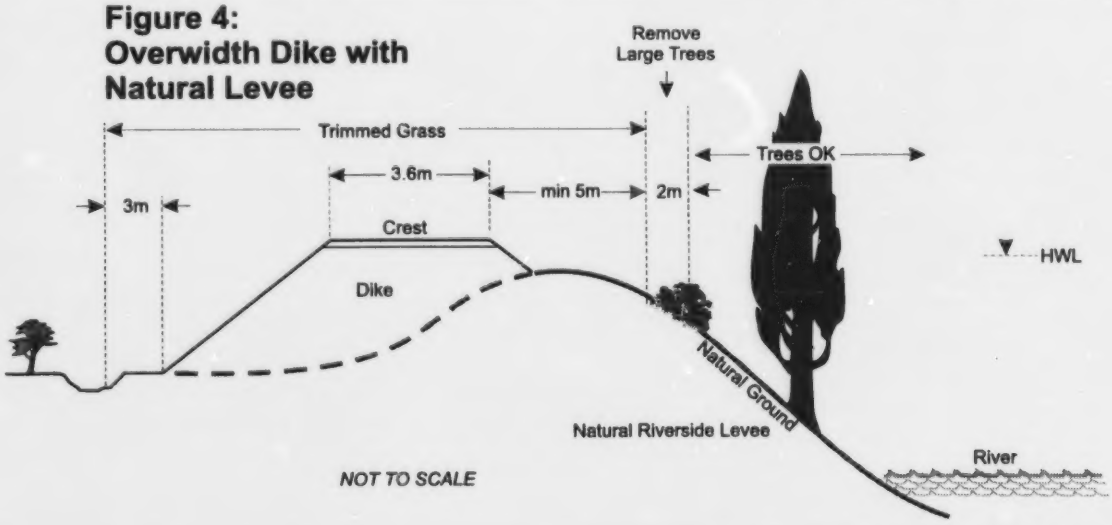


Figure 4:
Overwidth Dike with Natural Levee



Setback dike with riparian vegetation preserved on overbank – Cowichan River

8. Bank Protection*: Bank protection located on natural riverbanks and/or on overwidth dikes may contain clumps of controlled vegetation as per guideline 9. In sensitive habitat areas, consideration may be given to selective topping, pruning, thinning or stabilization of existing large vegetation provided the bank protection is not compromised.

9. Vegetation Clumps*: Controlled vegetation clumps which are devoid of potentially large growth and/or excessive vegetation are acceptable in riprap bank protection or on overwidth dikes. (Examples of potentially large growth include cottonwood, alder, birch, cherry, fir, spruce, cedar and maple trees; examples of excessive vegetation are blackberry and salmonberry bushes.)

Controlled vegetation clumps may contain shrubs which do not obstruct inspection visibility, displace riprap, or create holes. (Examples of acceptable shrub species are sitka willow, red osier dogwood, ninebark, oceanspray, hardhack, beaked hazelnut, mock orange, wild rose, snowberry or low growing non-spreading species.)

It is generally recommended that the branches of vegetation clumps be pruned and maintained to have a maximum span of about 3 metres in diameter. In order to retain sight lines for inspection, clumps should be spaced at least 9 metres apart. To reduce future vegetation maintenance requirements, it is recommended that vegetation be selected that will not exceed 5 to 6 metres in height.

10. Flood Protection Structures: Areas within 5 metres of floodboxes, pumphouses and similar flood control structures shall be kept clear of all trees as well as potentially large and excessive vegetation. Shrubs are acceptable as long as inspection, operation and maintenance are not affected.

11. Overbank*: It is generally recommended that vegetation on the overbank strip between a setback dike and the riverbank be preserved and protected with consideration for access for inspection and maintenance of bank protection. Clearing of vegetation in overbank strips for development of land in some manner (e.g. farmland, shore-based industry, commercial, industrial or residential activities) is subject to site specific review by DFO and/or MELP habitat officers.

12. Variations: Where environmental agencies have significant concerns for areas of sensitive habitat (such as historically overgrown works and/or FREMP red-coded areas), variations from these guidelines may be considered to increase protection of habitat where practical and economic, provided public safety is not compromised. Such sites will be subject to joint review by the office of the Inspector of Dikes (IOD), DFO and/or MELP habitat officers (see Appendix D regarding local environmental review processes) and may include consideration of selective pruning, topping, controlled vegetation clumps and/or compensatory habitat replacement. All variations from these guidelines which may effect public safety must be approved by the office of the IOD.

13. Annual Workplans: To facilitate orderly and timely environmental environmental reviews, it is strongly recommended that annual vegetation management workplans be submitted, particularly for sensitive habitat areas. This process will also have long term benefits in identifying sensitive habitats and maintaining records of environmental decisions to reduce future uncertainty regarding approval needs. A recommended template for workplans is included in Appendix E.

An example of an acceptable vegetation clump (hardhack) – Pitt River

Appendix A:

Glossary

bank protection:	treatment of slopes of dikes and banks of streams, lakes and other water bodies by placement of riprap (an engineered layer of graded broken rock pieces) or other forms of protection to prevent erosion by surface runoff, stream flows and/or wave action.
dike:	an embankment, berm, wall, piling or fill constructed to control flooding of land.
dike height:	the vertical distance from the dike crest level to natural ground as measured at the landside toe of a dike.
excessive vegetation:	growth such as blackberry and salmonberry whose pervasive presence obscures visibility and inhibits access.
large growth:	tree species, such as cottonwood, alder, birch, cherry, fir, spruce, cedar and maple, which potentially have a diameter exceeding about 0.3 m and/or height exceeding about 5 to 6 metres.
overbank:	the area of land between the waterside toe of a setback dike and the top of the streambank.
overwidth dike:	a dike having standard dike side-slopes (or flatter) and a minimum 9 metre crest width measured from the landside crest edge. (Overwidth dikes are sometimes formed by roads or dikes constructed beside natural riverside levees).
natural riverbank:	the bank of the river, formed naturally and not part of the dike fill; located below the dike height on the river side.
riparian vegetation:	the vegetation immediately in contact with a water body or sufficiently close to have direct influence on aquatic habitat values.
riverside dike:	a dike located adjacent to a stream (i.e. directly on a streambank). Riverside dikes may be with or without bank protection.
setback dike:	a dike that is set back from the ordinary high water mark of a river creating an overbank strip of natural ground between the dike fill and the riverbank.

standard dike: a dike built to a minimum crest elevation equal to the flood construction level and meeting standards of design and construction approved by the BC Ministry of Environment, Lands and Parks.

vegetation clumps: selective vegetation such as willow, red osier dogwood, and approved shrubs which are pruned and maintained to have an approximate branch spread of no greater than about 3 metres in diameter and height no greater than about 5 to 6 metres ensuring there is no obstruction to inspection visibility, displacement of riprap, nor potential for formation of holes.

Preserving a vegetation clump while repairing bank protection – Pitt River

Appendix B

Fish Habitat and Dike Maintenance Activities

Dike maintenance activities have the potential to negatively impact fish and fish habitat when undertaken without appropriate forethought and care. The Department of Fisheries and Oceans (DFO) has a mandate to protect fish habitat for the public interest. DFO defines fish habitat as "the spawning grounds, nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes". Areas adjacent to rivers, streams, wetlands, lakes and the ocean are commonly referred to as "riparian zones" and vegetation within this zone is called "riparian vegetation". Riparian vegetation is a very important component of fish habitat and is protected under the federal Fisheries Act.

These guidelines are aimed at MELP's Region 2, which includes the Fraser River System. The Fraser River supports over thirty species of fish. While all of these fish are important to the river ecosystem, several of these fish species are also important to BC's commercial, aboriginal and recreational fisheries. Over the last century, most of the foreshore habitats along the Lower Fraser River have been permanently lost or substantially altered due to filling and/or diking to protect property or create additional "usable" land. It is estimated that 95% of the shoreline of the Fraser River downstream of the Agassiz bridge has been diked. The loss of these habitats places an added importance on the remaining Fraser River foreshore habitats which have not been diked. It also demonstrates the need to provide at least some fish habitat value on dike structures in order to sustain healthy fisheries.

During the period of downstream migration, up to 800 million juvenile salmon concentrate along the edges of the Fraser River. Marsh and riparian vegetation along the river edges provide refuge areas for juvenile salmon from predators and from the faster currents found mid-river. They also supply food and nutrients to the estuarine food web. Estuaries provide critical rearing and refuge areas for juvenile salmon before they enter the ocean.

On smaller river systems, riparian vegetation can shade the water, providing water temperature regulation through the summer and winter months. Riparian vegetation also intercepts surface water, filtering it and preventing some sediments and pollutants from reaching the river. Sometimes, spawning areas are located immediately adjacent to dikes. In these situations additional care should be taken to prevent disturbance to spawning salmon and incubating eggs.

The Federal Fisheries Act

Under the Fisheries Act (R.S.C., 1985, c. F-14) DFO is responsible for protecting fish and fish habitat in waters frequented by fish. As previously stated, fish habitat is legally defined as "the spawning grounds, nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes". The Fisheries Act has both a habitat protection clause and a pollution prohibition clause.

Section 35(1) of the Fisheries Act states that "no person shall carry on any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat". Harmfully altering, disrupting or destroying fish habitat without authorization by the Minister of Fisheries and Oceans is a contravention of Section 35(1) of the Fisheries Act.

The Fisheries Act also prohibits pollution. Section 36(3) states that "no person shall deposit or permit the deposit of a deleterious substance of any type in water frequented by fish or in any place under any conditions where the deleterious substance or any other deleterious substance that results from the deposit of the deleterious substance may enter any such water". It is important to note that sediment laden water is considered a deleterious substance due to it's direct and indirect impacts on fish and fish habitat.

In 1986, DFO adopted the "Policy for the Management of Fish Habitat" . This policy sets a requirement for DFO to manage for "no net loss" of fish habitat on a project by project basis. "No net loss" of fish habitat may be achieved by relocation, redesign, and/or mitigation measures. When all these measures prove impossible or ineffective, DFO may consider fish habitat compensation as an option.

Both marshes and riparian vegetation are valuable fish habitats – Tilbury Slough

Appendix C

The BC Fish Protection Act

The BC Fish Protection Act is intended to both enable, and require provincial decision-makers to address the needs of fish and fish habitat in the adjudication of applications for water licenses, amendments, or approvals.

Section 5(1) of the Act states "in making a decision on an application ..., the comptroller or regional water manager may (a) consider impact on fish and fish habitat, and (b) include conditions respecting fish and fish habitat in the license, approval, or amendment."

Section 6(2) states "The Lieutenant Governor in Council may, by regulation, designate a stream as a sensitive stream under this section if the Lieutenant Governor in Council considers that the designation will contribute to the protection of a population of fish whose sustainability is at risk because of inadequate flow of water within the stream or degradation of fish habitat." Section 6(4) states that a license, approval or an amendment to a license or approval, in relation to a sensitive stream, may only be issued by the comptroller or regional water manager if any adverse impact on the sustainability of the protected fish population is likely to be insignificant, or if mitigation, and/or compensation will render the impact insignificant.

The Fish Protection Act also strengthens the provincial Water Act through a consequential amendment which prohibits the introduction of debris into a stream, stream channel or area adjacent to a stream if, as a result, harm or damage is caused to the stream or stream channel, or fish or fish habitat. Debris is defined as "(a) clay, silt, sand, rock or similar material, or (b) any material, natural or otherwise, from construction or demolition."

The BC Water Act

Ownership of the water and most stream beds is vested in the provincial Crown in British Columbia. Changes in and about streams have been managed and regulated through legislation for many years in order to protect and maintain certain values, resources, and legal rights associated the streams.

Section 9(1) of the Water Act states "The comptroller, a regional water manager or an engineer may grant an approval in writing authorizing on the conditions he or she considers advisable (a) a person to make changes in and about a stream, (b) a minister of the Crown, either in right of Canada or of British Columbia, to make changes in and about a stream, or (c) a municipality to exercise its powers under Divisions (3) and (4) of Part 16 of the Municipal Act."

Section 9(2) further states that "A minister or other person or a municipality may only make changes in and about a stream in accordance with an approval under this section or in accordance with the regulations or a license or order under this Act."

Changes in and about a stream are defined as (a) any modification to the nature of a stream including the land, vegetation, natural environment or flow of water within a stream, or (b) any activity or construction within the stream channel that has or may have an impact on a stream.

The Regulation enables a person to carry out a number of routine works without obtaining an approval, provided that the general conditions and notification requirements are carried out. For example, the repair and maintenance of existing dikes may be carried out under the Regulation, as long as the Habitat Officer is notified and the changes are made in accordance with any terms and conditions specified by the Habitat Officer to protect habitat.

The BC Dike Maintenance Act

The principal legislation in BC pertinent to operation and maintenance of flood protection works is the Dike Maintenance Act. The Act establishes a public official known as the Inspector of Dikes (IOD) who has "general supervision of all dikes and the operation of all diking authorities relative to the construction and maintenance of dikes".

Section 2(4) of the Act provides that works in and about flood protection dikes shall be subject to written approval by the Inspector of Dikes. "This includes:

- anything that may lower or decrease the size and/or integrity of the cross-section of a dike.
- installations of floodboxes, culverts, pipes or any structure in a dike.
- construction of works over or on a dike right of way.
- alterations to the foreshore adjacent to a dike."

The Act empowers the Inspector of Dikes to make Orders under the Act, and take measures in the interests of public safety if there is a failure to comply. The Act also provides for offenses where "a person ...

a.) injures or interferes with a dike or its operation;

b.) hinders a diking authority, the inspector or a person acting on behalf of either of them from protecting property from flooding:

c.) contravenes the act or an order of the inspector or minister."

Definitions under the Act:

- "dike is defined as an embankment, wall, fill, piling, pump, gate, floodbox, pipe, sluice, culvert, canal, ditch, drain, or any other thing that is constructed, assembled or installed to prevent the flooding of land.
- Diking Authority is defined as:

a.) the commissioners of a district to which part 2 of the Drainage, Ditch and Dike Act applies,

b.) a person owning or controlling a dike other than a private dike.

c.) a public authority designated by the minister as having any responsibility for maintenance of a dike other than a private dike,

d.) a regional district, a municipality, or an improvement district."

Appendix D

Environmental Review Processes in Ministry of Environment,Lands and Parks Region 2 - Lower Mainland

1. Fraser River Estuary Management Program (FREMP)

Covers the mainstem of the Fraser River downstream of Kanaka Creek in Maple Ridge as well as the lower Pitt River, Sturgeon Bank, Roberts Bank, Boundary Bay and Mud Bay.

Fraser River Estuary Management Program
Metrotown Place III
#501 5945 Kathleen Avenue,
Burnaby V5H 4J7
Phone: (604) 775-5756
Fax: (604) 775-5198

2. Burrard Inlet Environmental Action Plan (BIEAP)

Covers the areas of Burrard Inlet, Indian Arm and False Creek and the tidal areas of all streams entering these bodies of water.

Burrard Inlet Environmental Action Plan
Metrotown Place III
#501 5945 Kathleen Avenue,
Burnaby V5H 4J7
Phone: (604) 775-5756
Fax: (604) 775-5198

3. Squamish Estuary Environmental Assessment Committee (SEEAC)

Covers the Squamish River downstream of the Mamquam River, Mamquam Blind Channel and the lower Stawamus River.

Squamish Estuary Environmental Assessment Committee
c/o BC Ministry of Environment, Lands and Parks
Planning & Assessment
10470 152 Street,
Surrey, B.C.
V3R 0Y3
Phone: (604) 582-5366
Fax: (604) 930-7119

4. Planning & Assessment, BC Ministry of Environment, Lands and Parks

All maintenance projects involving variations as well as major repairs and/or new construction which do not fall under one of the special management areas listed above should be forwarded to the MELP Planning & Assessment (Surrey office). An application can be faxed to you. Referrals received by Planning & Assessment are forwarded to Fish & Wildlife Management and to the Department of Fisheries & Oceans for review.

BC Ministry of Environment, Lands and Parks
Planning & Assessment
10470 152 Street,
Surrey, B.C.
V3R 0Y3
Phone: (604) 582-5366
Fax: (604) 930-7119

It should be noted that projects should be submitted with all required information well in advance of the proposed start date.

Bank protection – Cowichan River

Notes from Fraser River Estuary Management Program Area

Vegetation control under the guidelines will require approval from the FREMP Environmental Review Committee (ERC). The guidelines are not an authorization to proceed without approval, but should instead be taken as guidance as to what is potentially approvable.

The one exception to item 1 above is that vegetation management on flood protection dikes in FREMP green-coded shoreline does not require approval from the FREMP ERC. However, FREMP must be notified well in advance (a minimum of 30 days) of the vegetation management commencing. This notification must include a site map showing where and a paragraph describing the works to take place.

Vegetation control on flood protection dikes must comply with the FREMP colour code definition of the respective shoreline. The applicable definitions are as follows:

Definition of Red Coded Shoreline:

Shoreline areas having highly productive habitat features and/or areas where habitat compensation has been previously constructed to offset impacts. Development may occur in red-coded areas provided that mitigation is applied through site location and/or design to avoid impacts on habitat features of the area. Habitat compensation is not an option as a rule. The only circumstances whereby exception to the above guideline can be considered area where the project is specifically undertaken in the interest of public health and safety. Even in these cases, alternative siting and design mitigation will be pursued to the maximum extent possible.

Healthy Habitat and dike structures can co-exist – Lower Fraser River

Definition of Yellow Coded Shoreline:

Shoreline areas having moderately productive habitat features. Development may occur in yellow coded areas provided that mitigation and/or compensation measures are incorporated into the project design to ensure that there is NO NET LOSS of productive capacity as a result of the project. Mitigation options should be pursued to the maximum extent possible prior to consideration of compensation for unavoidable impacts on habitat features.

Definition of Green-Coded Shoreline:

Shoreline areas with low productivity or lacking habitat features. Development may occur in green-coded areas provided that reasonable efforts are made to mitigate environmental impacts through appropriate location and design. Habitat compensation will not be a condition of approval.

In the case of vegetation control on flood protection dikes in a FREMP "Red" coded shoreline, the FREMP ERC will require confirmation from the Inspector of Dikes that vegetation management is required in the interest of public health and safety.

For vegetation control on flood protection dikes in FREMP "Red" or "Yellow"-coded shoreline, habitat compensation works will be required for any habitat impacts that are deemed to be unavoidable. Mitigation options should be pursued to the maximum extent possible to avoid impacts on habitat features prior to consideration of compensation for unavoidable impacts on habitat features.

For vegetation control on flood protection dikes in FREMP "Green" coded shoreline, although habitat compensation will not be a condition of approval, mitigation options should be pursued to the maximum extent possible to avoid impacts on any habitat features.

Appendix E

Dike Vegetation Maintenance Workplan

Location of this Dike Reach:_____

Maintenance Supervisor:_____

Contact Address: _____

_____

Phone number: _____Fax number:_____

Type of Dike Structure: (e.g. Riverside Dike, Setback Dike, Overwidth dike, Bank Protection)_____

_____

Length of this Reach:_____ _____

Size and type of Vegetation to be Removed: (e.g. mostly grass, some small shrubs)_____

_____

Type of Existing Bank Protection: (e.g. riprap)_____ _____

_____

Prescription to be Performed: (e.g. mowing of grass, pruning of shrubs)_____

_____

_____

Maintenance Period for this Reach: (e.g. annual)_____

Maintenance for this Reach was last performed in: (e.g. May 1998)_____

Schedule for maintenance work:_____

Is this Reach known to be or to contain sensitive fish habitats?_____

Have comments been received from Environmental agencies in the past for this Reach?_____

Date of Application:_____

Check if Attached: ☐ Map(s) ☐ Plans ☐ Photographs

Further information regarding the BC Dike Maintenance Act, its application and related interpretation of these guidelines may be obtained from:

The Inspector of Dikes
Water Management Branch
Ministry of Environment, Lands and Parks
PO Box 9340
Stn Prov Govt.
Victoria, BC V8W 9M1

www.elp.gov.bc.ca/wat/flood/floodmgt.html

or from regionally based Deputy Inspectors of Dikes in MELP offices in Nanaimo, Surrey, Kamloops, Penticton, Nelson, Prince George, Williams Lake, and Smithers.

Further information on the federal Fisheries Act and application of these guidelines to habitat preservation and enhancement may be obtained from:

Habitat Policy Unit
Habitat and Enhancement Branch
Department of Fisheries and Oceans
Suite 360 555 West Hastings Street,
Vancouver, B.C. V6B 5G3

www.pac.dfo-mpo.gc.ca